



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,525	09/02/2003	Mohammed N. Islam	074036.0126	3348
5073	7590	01/24/2006	EXAMINER	
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			LEE, DAVID J	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

00

<b>Office Action Summary</b>	<b>Application No.</b> 10/653,525	<b>Applicant(s)</b> ISLAM, MOHAMMED N.	
	<b>Examiner</b> David Lee	<b>Art Unit</b> 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,7-11,13,14,17,18,24,25,27,33-36,41,43 and 47-74 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,7-11,13,14,17,18,24,25,27,33-36,41,43 and 47-74 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 7-11, 13, 14, 17, 18, 24, 25, 27, 33-35, 48-66 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 claims a plurality of integrated modules with at least one that has at least a transmitter and a receiver. The signals from the integrated modules are somehow multiplexed (see 112 2<sup>nd</sup> issue below), and then split using an optical power splitter. Neither the specification nor the drawings suggest or illustrate such a setup. Figure 3 shows the multiplexing is done first, then the individual signals are sent to the integrated modules, and then the transmitted signals are split using a power splitter. This clearly teaches away from the limitations of claim 1, where the WDM is coupled to the integrated modules to first combine the output optical signals into a multiple wavelength output optical signal, whereupon this multiple wavelength output optical signal is split using a power splitter. Figure 4a seems to be more in line with the limitations in the claim, but upon further inspection, integrated modules comprising a receiver and a transmitter are non-existent. Instead, the transmitting portions seem to be on the left side (“from input links or line cards”) and the receiving portions seem to be on the right side (“to output links

Art Unit: 2633

or line cards”). On the contrary, claim 1 teaches that at least one of the plurality of integrated modules comprises one or transmitters and one or more receivers, which clearly teaches away from the drawings and specification.

Claim 18 claims that the “power splitter receives a multiple wavelength output optical signal and separates the multiplex wavelength output optical signal into a plurality of multiple wavelength output signals.” As shown in Figure 3 and corresponding portions of the specification, the power splitter is only shown to receive a single wavelength signal (i.e. – 252a). The claim clearly teaches away from this. If instead the claim somehow is meant to convey Figure 4a, 112 2<sup>nd</sup> problems would exist, similar to claim 1.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 7-11, 13, 14, 17, 48-55, and 67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 claims that each transmitter transmits a modulated signal at a first wavelength. It is then claimed that each of these modulated output optical signals are multiplexed with a wavelength division multiplexer. However, since each signal from each transmitter is transmitted at a first optical signal wavelength, it is unclear how the multiplexing is done. In a WDM system, signals of different wavelengths are multiplexed (instead of multiple signals at the same wavelength, as claimed in claim 1). As such, the claims are rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter.

Claim 67 recites the limitation "the input integrated module". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 36, 41, 43, 47, 67-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harstead et al. (US Patent No. 5,912,749).

Regarding claim 36, Harstead teaches integrated modules operable to receive signals (the homes in R1 of fig. 1), an optical splitter operable to split signals comprising a substantially similar set of wavelengths (26 of fig. 1), and a controller operable to generate a control signal for contention reduction (12 of fig. 1; see also abstract). Harstead does not specifically teach a signal separator. Instead, Harstead uses a multiplexer to send each wavelength to its desired destination, which effectively fulfills the same purpose as the signal separator of the instant invention. Both techniques are widely used and well known in the art. As such, examiner takes official notice, noting that an advantage of having separators over multiplexers would be a significant increase in cost savings for components (filters are cheaper than multiplexers). Therefore, it would have been obvious to a skilled artisan at the time of invention to use a signal separator for final destination transmission. Harstead does not specifically disclose that the integrated modules are capable of transmitting signals. However, it is clear that in such systems,

Art Unit: 2633

the ONUs and the central office communicate with each other, as opposed to one-way transmission. If not inherent, it would have been obvious and clear to a skilled artisan at the time of invention that the ONUs would have transmitting capabilities. In addition, it is clear to a skilled artisan to use different wavelengths for transmissions and receptions.

Regarding claim 41, Harstead does not expressly disclose identifiers. Examiner takes official notice that the use of identifiers in such complex systems are well known in the art. It would have been obvious to a skilled artisan at the time of invention to use identifiers in this system in order to cost-effectively differentiate data transmitted over various protocols and formats.

Regarding claim 43, Harstead discloses that the transmitters comprise diodes (col. 4, line 27).

Regarding claim 47, Harstead teaches the limitations of claim 41 but does not expressly disclose a look up table. Examiner takes official notice that look up tables are common when using identifiers. If not inherent, it would have been obvious to a skilled artisan at the time of invention to use a look up table in order to accurately identify the signals associated with the identifiers.

Regarding claim 67, in view of the 112 rejection above, Harstead teaches a second power splitter to receive the second output signal and separate the signal into a plurality of signals (28 of fig. 1).

Regarding claim 68, Harstead teaches the limitations of claim 36 but does not expressly disclose that the wavelengths are separated based at least in part on the control signal. Examiner takes official notice that it is well known for control signals to restructure and

Art Unit: 2633

reconfigure wavelengths. It would have been obvious to a skilled artisan at the time of invention to do so in order to restructure traffic so as to optimize and improve bandwidth transmission and speed.

Regarding claims 69 and 70, Harstead teaches that the signals are time division multiplexed (see Abstract).

Regarding claim 71, Harstead teaches that the fibers are single mode fibers (col. 1, line 22).

Regarding claim 72, Harstead teaches that a control network couples the controller to the integrated modules (16 of fig. 1 is considered the control network), wherein the control network comprises an Ethernet network (the single mode fibers run throughout the system are considered Ethernet).

Regarding claim 73, Harstead teaches an optical amplifier to amplify the signals (i.e. - 32 of fig. 1).

Regarding claim 74, Harstead does not specifically disclose a round robin scheduling algorithm, but examiner takes official notice that this type of scheduling is notoriously well known and widely used in the art. It would have been obvious to a skilled artisan at the time of invention to use this in order to provide an effective and easy-to-manage scheduling agent.

### ***Response to Arguments***

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Art Unit: 2633

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lee whose telephone number is (571) 272-2220. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2633

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

  
**M. R. SEDIGHIAN**  
**PRIMARY EXAMINER**